

REMARKS

In an Office Action mailed on May 4, 2005, an objection was made to the specification due to the lack of a "Summary of the Invention" section; claims 1, 7, 11, 17, 21 and 27 were rejected under 35 U.S.C. § 102(b) as being anticipated by Ernstoff; claims 1, 2, 4, 6, 8, 11, 12, 14, 16, 18, 21, 22, 24 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brandinger in view of Berlin; claims 29-31 and 33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ernstoff in view of Berlin and further in view of Hewlett; and claims 3, 5, 9, 10, 13, 15, 19, 20, 23, 25, 28 and 32 were objected to as being dependent upon rejected base claims but were indicated as being allowable if rewritten in independent form. The objection to the specification as well as the §§ 102 and 103 rejections are addressed below.

Objection to the Specification for Not Including a Summary of the Invention:

The Examiner objects to the specification because it lacks a Summary of the Invention section. However, Applicant respectfully traverses this objection. In this manner, it is clear from the language of the regulations which sections of the specification are mandatory and which are permissive. For example, 37 C.F.R. § 1.27(b) requires: "a brief abstract of the technical disclosure in the specification which must commence of a separate sheet, preferably following the claims, under the heading 'Abstract of the Disclosure.'" In similar fashion, 37 C.F.R. § 1.75(a) states: "The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery." In contrast, 37 C.F.R. § 1.73 states "a brief summary of the invention indicating its nature and substance, which may include a statement of the object of the invention, should precede the detailed description," and further states, "such summary should, when set forth, become commensurate with the invention as claimed."

Accordingly, it is submitted that a Summary of the Invention section is not required, and thus, Applicant respectfully declines to submit one.

Rejections of Claims 1, 4, 6-8, 21, 24, 26 and 27:

The apparatus of independent claim 1 and the projection system of independent claim 21 each includes a circuit to, for each pixel of a mirror array, control the mirror array to control the

number of the mirrors of the array, which reflect light into an optical path that intersects a location of the pixel based on an intensity for the pixel.

Independent claims 1 and 21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Ernstoff. However, contrary to the explicitly-recited claim limitations, Ernstoff fails to teach or even suggest a circuit that controls the number of mirrors that reflect light into an optical path that intersects a location of a pixel based on an intensity for that pixel. In the Final Office Action, the Examiner refers to the language in lines 4-7 in column 5 of Ernstoff, which is reproduced below:

The timing and control circuits effect the selective activation of the DMD elements as necessary to provide the desire gray scale intensity for each pixel on the screen 21.

In the abstract, the above-recited language from Ernstoff may arguably appear to state that each pixel intensity is controlled by selectively activating the digital micro mirror device (DMD) elements. However, such an interpretation of this language ignores the rest of Ernstoff's disclosure, which places the cited language in its proper context. More specifically, Ernstoff is clear that the "selective activation" in the above-recited language refers to the amount of time that a particular mirror reflects light (i.e., the "on time") toward the screen 21 for purposes of controlling the intensity of the pixel. In this regard, each mirror of the DMD, is associated with one mirror element. For example, in lines 48-51 in column 5 of Ernstoff equates the mirror elements to pixels. Additionally, beginning with line 59 in column 6 of Ernstoff and continuing to line 12 in column 7 of Ernstoff, Ernstoff describes how the "on time" for a particular mirror controls the intensity of the pixel. Applicant also directs the Examiner to Figs. 6(c) and 6(d) that depict the illumination state of the pixel based on the state of the mirror. Therefore, when Ernstoff is read in its entirety, it is clear that Ernstoff is directed to controlling the modulation of a particular mirror to regulate the intensity for a pixel. There is no disclosure, however, in Ernstoff regarding controlling the number of mirrors that are actuated for purposes of controlling the intensity of a particular pixel.

Thus, for at least the reason that Ernstoff fails to teach the circuit of independent claims 1 and 21, Ernstoff fails to anticipate these claims.

Independent claims 1 and 21 also stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Brandinger in view of Berlin. In the § 103(a) rejections, the Examiner repeats

the positions taken with respect to previous versions of these claims, i.e., versions that recited the dimension of the array being associated with intensity values. However, Applicant requests the Examiner to consider the specific limitations that were added by the last amendment. In particular, independent claims 1 and 21 recite a circuit to control the mirror array to control the number of the mirrors that reflect light into an optical path that intersect a location of the pixel based on an intensity for the pixel.

As pointed out in the previous reply, Brandinger does not teach or even suggest controlling the number of mirrors that reflect light into an optical path for purposes of controlling a pixel intensity. Thus, regardless of the actual laser profile, Brandinger discloses controlling the amount of light that is reflected by the same number of mirrors of the micro mirror array 12. Berlin fails to teach or suggest the missing claim limitations, as Berlin describes a fault tolerant projection display system. However, there is no teaching or suggestion in Berlin regarding a circuit that controls a number of mirrors that reflect light into an optical path that intersects a location of a pixel based on an intensity for the pixel.

Thus, for at least the reason that the hypothetical combination of Brandinger and Berlin fails to teach or suggest all claim limitations, a *prima facie* case of obviousness has not been set forth for either independent claim 1 or 21.

Claims 4, 6-8, 24, 26 and 27 are patentable for at least the reason that these claims depend from allowable independent claims. Therefore, for at least the reasons that are set forth above, withdrawal of the §§ 102 and 103 rejections of claims 1, 4, 6-8, 21, 24, 26 and 27 is requested.

Rejections of Claims 11, 14 and 16-18:

The method of independent claim 11 controlling a mirror array for each pixel to control the number of mirrors that reflect light into an optical path that intersects a location of the pixels based on an intensity for the pixel.

See discussion of independent claims 1 and 21 above. In particular, when the language in lines 4-7 in column 5 of Ernstoff is placed in its proper context, it is clear that Ernstoff fails to teach or even suggest controlling the number of mirrors that reflect light into an optical path for purposes of controlling a pixel intensity. Instead, Ernstoff discloses a pulse width modulation

technique that is applied to a dedicated mirror for purposes of controlling the intensity of the corresponding pixel. Ernstoff does not, however, disclose controlling the number of mirrors based on a pixel intensity. As such, Ernstoff fails to anticipate independent claim 11.

As discussed above in connection with independent claims 1 and 21, neither Brandinger nor Berlin teaches or suggests controlling the number of mirrors of the array that reflect light into an optical path that intersects a location of pixels based on an intensity for the pixel. Thus, Berlin is directed to a fault tolerant system but does not teach or suggest the controlling of claim 11; and Brandinger teaches a fixed number of mirrors that reflect light into an optical path. Therefore, for at least the reason that the hypothetical combination of Brandinger and Berlin fails to teach or suggest the limitations of independent claim 11, a *prima facie* case of obviousness has not been set forth for this claim.

Claims 14 and 16-18 are patentable for at least the reason that these claims depend from an allowable claim. Therefore, for at least the reasons that are set forth above, withdrawal of the § 103 rejections of claims 11, 14 and 16-18 is requested.

Rejection of Claim 29:

The projection system of independent claim 29 includes a processor that, for each pixel of a projected image, controls the number of mirrors of a mirror array that reflect light into an optical path that intersects a location of a pixel based on an intensity for the pixel.

See discussion of independent claims 1 and 21 above. In particular, neither Brandinger, Berlin nor Ernstoff teaches or suggests a processor to perform the control that is recited in independent claim 29. Thus, Ernstoff fails to anticipate independent claim 29; and the hypothetical combination of Brandinger and Berlin fails to teach or suggest all limitations of this claim. Hewlett also fails to teach or suggest the missing claim limitations, as Hewlett merely discloses the use of a flash RAM for its non-volatile memory 520. Therefore, for at least the reason that the hypothetical combination of Berlin, Brandinger and Hewlett fails to teach or suggest all limitations of claim 29, withdrawal of the § 103 rejection of this claim is requested.

Rejections of Claims 30, 31 and 33:

The article of independent claim 30 includes a computer-readable storage medium that stores instructions to when executed cause a computer to control a mirror array to produce a projected image. The instructions cause the computer to control the number of the mirrors that reflect light into an optical path that intersects a location of the pixel based on an intensity for the pixel.

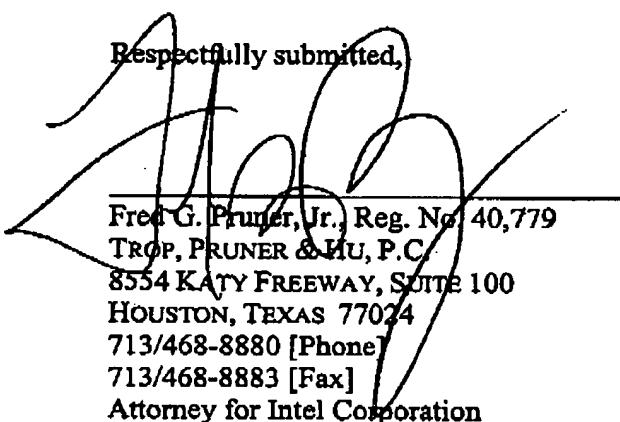
See discussion of independent claims 1, 21 and 29 above. For at least the reason that the hypothetical combination of Ernstoff, Berlin and Hewlett fails to teach or suggest instructions that when executed cause a computer to control the number of mirrors that reflect light into an optical path that intersects a location of the pixel based on an intensity for the pixel, a *prima facie* case of obviousness has not been set forth for claim 30.

Claims 31 and 33 are patentable for at least the reason that these claims depend from an allowable claim. Therefore, for at least the reasons that are set forth above, withdrawal of the § 103 rejections of claims 30, 31 and 33 is requested.

CONCLUSION

In view of the foregoing, withdrawal of the §§ 102 and 103 rejections and a favorable action in the form of a Notice of Allowance are requested. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 20-1504 (ITL.1035US).

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Respectfully submitted,

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